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Abstract

A method of infusing a dye into the surface of an article formed of a plastic material comprises contacting the surface with a solution including one or more solvents each aggressive to the plastic material, one or more dyes and one or more substances each capable of plasticizing the plastic material. If the plastic material is polycarbonate, then the aggressive solvent may be one or more chlorinated hydrocarbons. The dye may be a photochromic dye, a cosmetic tinting dye, dyes for absorbing infrared, laser and ultraviolet radiation, or combinations thereof. A wide range of plasticizers has been investigated. The article is contacted by the solution for ten seconds to one minute; and nearly all the infused solvent is then evaporated from the article by heating. The use of one or more plasticizers reduces or eliminates bubbling or hazing of the contacted surface during solvent evaporation. The dyed article comprises a surface layer having a depth of the order of magnitude of 100 microns containing one or more dyes, one or more plasticizers and, likely, a trace amount of the one or more aggressive solvents.